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EXAMINER	
DUONG, THOI V	

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 07/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/820,702	KIM, KYOUNG SUB	
	Examiner	Art Unit	
	Thoi V. Duong	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 April 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the Amendment filed April 28, 2005.

Accordingly, claims 1, 7 and 12 were amended. Currently, claims 1-18 are pending in this application.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 7 and 12 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Niibori et al. (Niibori, USPN 5,808,707).

Re claim 1, as shown in Fig. 15, Niibori discloses a liquid crystal display device, comprising:

a liquid crystal panel 1;

a backlight assembly 27 for radiating a light onto the liquid crystal panel, said backlight assembly having a light source 28;

optical sheets 32 on the backlight assembly 27 (col. 13, lines 6-8);

a panel guide 17 provided between the backlight assembly 27 and the liquid crystal panel 1 to support the liquid crystal panel 1; and

a pad 18 provided between the panel guide 17 and the backlight assembly 27 and fully offset from the light source 28 and maintaining a distance between the panel guide 17 and the backlight assembly 27 (col. 12, lines 10-14),

wherein, re claim 2, the pad 18 is provided between a light guide 29 included in the backlight assembly 27 and the panel guide 17;

wherein, re claim 3, the pad 18 is a silicon pad provided between the light guide 29 and the panel guide 17 (col. 9, lines 12-15); and

wherein, re claim 4, the pad 18 is a resin coated between the light guide 29 and the panel guide 17 (col. 9, lines 12-15).

Re claim 5, as shown in Fig. 15, the liquid display device of Niibori further comprises:

a main frame 26 (backlight supporting member) to which the backlight assembly 27 is secured;

a printed circuit board 14 (panel control board) installed under the main frame 26;

a tape carrier package (4, 5 and 15) mounted with drive integrated circuits for driving the liquid crystal panel 1 and installed between the liquid crystal panel 1 and the printed circuit board 14 (col. 3, lines 47-52 and col. 9, lines 52-55; see also Fig. 13);

a top case 3d for surrounding the upper edge of the liquid crystal panel 1 and the side of the main frame 26 (see Fig. 21); and

a bottom case 3e installed under the printed circuit board and having one side assembled in such a manner to overlap with the top case (see Fig. 21).

Re claim 7, as shown in Fig. 19, Niibori discloses a liquid crystal display device, comprising:

a main frame 26;

a liquid crystal panel 1;

a backlight assembly 27 arranged with the main frame 26 for radiating light onto the liquid crystal panel 1, comprising:

a lamp 28;

a lamp housing having a reflector 30; and

a light guide 29;

optical sheets (not shown) disposed in superposition of the light guide 29 (col. 15, lines 57-58);

a panel guide 17 provided between the backlight assembly 27and the liquid crystal panel 1 for supporting the liquid crystal panel 1, wherein the panel guide 17 and the main frame 26 enclose a portion of the backlight assembly; and

a first pad 18 provided between the panel guide 17 and the light guide 29 separating the liquid crystal panel 1 and the optical sheets from the lamp 28, said pad 18 fully overlapping the light guide 29.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 6 and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Niibori et al. (Niibori, USPN 5,808,707) in view of Kawano et al. (Kawano, USPN 6,195,141 B1).

The LCD of Niibori includes all that is recited in claims 6 and 8-11 except for second and third pads formed on both sides of the printed circuit board.

As shown in Fig. 3, Kawano discloses a LCD device comprising a liquid crystal panel 7 and a printed circuit board 6 which is securely held between a lower cover 14 and an upper cover 17 through buffer members 20. Kawano teaches that the buffer members are made of elastic material to prevent shock impact from damaging the connection between the printed circuit board and the liquid crystal panel, and hence the contents of display can be surely display on the liquid crystal panel (col. 2, lines 19-28; col. 3, lines 41-44).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LCD device of Niibori with the teaching of Kawano by forming a second silicon pad provided between the main frame and the printed circuit board to maintain a distance between the main frame and the printed circuit board and a third silicon pad provided between the printed circuit board and the bottom case to maintain a distance between the printed circuit board and the bottom case so as to secure the printed circuit board in place and also prevent shock from affecting display quality (col. 2, lines 19-28).

7. Claims 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Niibori et al. (Niibori, USPN 5,808,707) in view of Muramatsu et al. (Muramatsu, USPN 5,503,665).

Re claim 12, as shown in Fig. 15, Niibori discloses a liquid crystal display device, comprising:

a liquid crystal panel 1;

a backlight assembly 27 for radiating a light onto the liquid crystal panel, said backlight assembly having a light source 28;

optical sheets 32 on the backlight assembly;

a panel guide 17 provided between the backlight assembly 27 and the liquid crystal panel 1 to support the liquid crystal panel 1;

a pad 18 provided between the panel guide 17 and the backlight assembly 27 fully offset from the light source 28, said pad 18 maintaining a distance between the panel guide 17 and the backlight assembly 27,

wherein, re claim 13, the pad 18 is provided between a light guide 29 included in the backlight assembly 27 and the panel guide 17.

wherein, re claim 14, the pad 18 is a silicon pad provided (col. 9, lines 12-15);

wherein, re claim 15, the pad 18 is a resin (col. 9, lines 12-15).

Re claim 16, as shown in Fig. 15, the liquid crystal display device of Niibori further comprises:

a main frame 26 (backlight supporting member) to which the backlight assembly 27 is secured;

a printed circuit board 14 (panel control board) installed under the main frame 26;

a tape carrier package 4 mounted with drive integrated circuits for driving the liquid crystal panel 1 and installed between the liquid crystal panel 1 and the printed circuit board 14 (col. 3, lines 47-52 and col. 9, lines 52-55);

a top case 3d for surrounding the upper edge of the liquid crystal panel 1 and the side of the main frame 26 (see Fig. 21); and

a bottom case 3e installed under the printed circuit board and having one side assembled in such a manner to overlap with the top case (see Fig. 21).

Niibori discloses a liquid crystal display device that is basically the same as that recited in claim 12 except for the panel guide having a depression for receiving the pad.

As shown in Figs. 7 and 8, Muramatsu discloses a liquid crystal display device comprising a liquid crystal panel 10 and a panel guide 100 having a depression 101a (semi-spherical concave portion) therein for receiving a pad 45 (protrusion) (col. 6, lines 44-48) for protecting the liquid crystal display panel from external forces (col. 1, lines 47-51 and col. 2, lines 20-32 and 50-55).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display of Niibori with the teaching of Muramatsu by forming a depression in the panel guide for receiving the pad so as to protect the liquid crystal display panel from slipping in the horizontal direction even though the liquid crystal display panel is large and heavy (col. 6, lines 58-67).

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Niibori et al. (Niibori, USPN 5,808,707) in view of Muramatsu et al. (Muramatsu,

USPN 5,503,665) as applied to claims 12-16 above and further in view of Kawano et al. (Kawano, USPN 6,195,141 B1).

The LCD of Niibori as modified in view of Muramatsu above includes all that is recited in claim 17 except for second and third pads formed on both sides of the printed circuit board.

As shown in Fig. 3, Kawano discloses a LCD device comprising a liquid crystal panel 7 and a printed circuit board 6 which is securely held between a lower cover 14 and an upper cover 17 through buffer members 20. Kawano teaches that the buffer members are made of elastic material to prevent shock impact from damaging the connection between the printed circuit board and the liquid crystal panel, and hence the contents of display can be surely display on the liquid crystal panel (col. 2, lines 19-28; col. 3, lines 41-44).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the LCD device of Niibori with the teaching of Kawano by forming a second silicon pad provided between the main frame and the printed circuit board to maintain a distance between the main frame and the printed circuit board and a third silicon pad provided between the printed circuit board and the bottom case to maintain a distance between the printed circuit board and the bottom case so as to secure the printed circuit board in place and also prevent shock from affecting display quality (col. 2, lines 25-28).

9. Claims 1-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (Fig. 2) in view of Niibori et al. (Niibori, USPN 5,808,707).

Re claims 1 and 7, as shown in Fig. 2, Applicant's Prior Art discloses a liquid crystal display (LCD) device, comprising:

a liquid crystal panel 2;

a backlight assembly arranged with the main frame for radiating light onto the liquid crystal panel, comprising: a lamp (light source) 20, a lamp housing 18, and a light guide 6;

optical sheets 4 on the backlight assembly; and

a panel guide 12 provided between the backlight assembly and the liquid crystal panel to support the liquid crystal panel.

Re claim 5, the LCD device further comprises:

a main frame 14 to which the backlight assembly is secured;

a printed circuit board 8 installed under the main frame;

a tape carrier package 22 mounted with drive integrated circuits for driving the liquid crystal panel and installed between the liquid crystal panel and the printed circuit board;

a top case 16 for surrounding the upper edge of the liquid crystal panel and the side of the main frame; and

a bottom case installed under the printed circuit board and having one side assembled in such a manner to overlap with the top case.

Applicant's Prior Art discloses a LCD device that is basically the same as that recited in claims 1 and 7 except for a pad provided between the panel guide and the

backlight assembly and fully offset from the light source, said pad fully overlapping the light guide.

As shown in Fig. 15, Niibori discloses a liquid crystal display device, comprising:

a pad 18 provided between the panel guide 17 and the backlight assembly 27 fully offset from the light source 28, said pad 18 maintaining a distance between the panel guide 17 and the backlight assembly 27 and fully overlapping the light guide 29,

wherein, re claim 2, the pad 18 is provided between a light guide 29 included in the backlight assembly 27 and the panel guide 17.

wherein, re claim 3, the pad 18 is a silicon pad provided (col. 9, lines 12-15);

wherein, re claim 4, the pad 18 is a resin (col. 9, lines 12-15).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LCD of Applicant's Prior Art with the teaching of Niibori by providing a pad between the panel guide and the backlight assembly fully offset from the light source and fully overlapping the light guide to improve the effect of relaxing the impact to the liquid crystal panel, prevent the deterioration of the alignment characteristic and further ensure the image quality (col. 13, lines 47-51 and col. 15, lines 14-18).

10. Claims 6 and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (Fig. 2) in view of Niibori et al. (Niibori, USPN 5,808,707) as applied to claims 1-5 and 7 above and further in view of Kawano et al. (USPN 6,195,141 B1).

The LCD of Applicant's Prior Art (Fig. 2) as modified in view of Niibori above includes all that is recited in claims 6 and 8-11 except second and third pads formed on both sides of the printed circuit board.

As shown in Fig. 3, Kawano discloses a LCD device comprising a liquid crystal panel 7 and a printed circuit board 6 which is securely held between a lower cover 14 and an upper cover 17 through buffer members 20. Kawano teaches that the buffer members are made of elastic material to prevent shock impact from damaging the connection between the printed circuit board and the liquid crystal panel, and hence the contents of display can be surely display on the liquid crystal panel (col. 2, lines 19-28; col. 3, lines 41-44).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the LCD device of Applicant's Prior Art with the teaching of Kawano by forming a second silicon pad provided between the main frame and the printed circuit board to maintain a distance between the main frame and the printed circuit board and a third silicon pad provided between the printed circuit board and the bottom case to maintain a distance between the printed circuit board and the bottom case so as to secure the printed circuit board in place and also prevent shock from affecting display quality (col. 2, lines 19-28).

11. Claims 12-16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (Fig. 2) in view of Niibori et al. (Niibori, USPN 5,808,707) and Muramatsu et al. (USPN 5,703,665).

Re claim 12, as shown in Fig. 2, Applicant's Prior art discloses a liquid crystal display device, comprising:

a liquid crystal panel 2;

a backlight assembly for radiating a light onto the liquid crystal panel, said backlight assembly having a light source 20;

optical sheets 4 on the backlight assembly; and

a panel guide 12 provided between the backlight assembly and the liquid crystal panel to support the liquid crystal panel,

Re claim 16, the liquid crystal display device further comprises:

a main frame 14 to which the backlight assembly is secured;

a printed circuit board 8 installed under the main frame;

a tape carrier package mounted with drive intergrated circuits 22 for driving the liquid crystal panel and installed between the liquid crystal panel and the printed circuit board;

a top case 16 for surrounding the upper edge of the liquid crystal panel and the side of the main frame; and

a bottom case 10 installed under the printed circuit board and having one side assembled in such a manner to overlap with the top case,

wherein, re claim 18, a distance between the panel guide and the backlight assembly is approximately 0.4 mm.

Applicant's Prior Art discloses a liquid crystal display device that is basically the same as that recited in claim 12 except for a pad provided between the panel guide and

the backlight assembly fully offset from the light source, said pad maintaining a distance between the panel guide and the backlight assembly, wherein said panel guide has a depression therein for receiving the pad.

At first, as shown in Fig. 15, Niibori discloses a liquid crystal display device, comprising:

a pad 18 provided between the panel guide 17 and the backlight assembly 27 fully offset from the light source 28, said pad 18 maintaining a distance between the panel guide 17 and the backlight assembly 27,

wherein, re claim 13, the pad 18 is provided between a light guide 29 included in the backlight assembly 27 and the panel guide 17.

wherein, re claim 14, the pad 18 is a silicon pad provided (col. 9, lines 12-15);

wherein, re claim 15, the pad 18 is a resin (col. 9, lines 12-15).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LCD of Applicant's Prior Art] with the teaching of Niibori by providing a pad between the panel guide and the backlight assembly fully offset from the light source to improve the effect of relaxing the impact to the liquid crystal panel, prevent the deterioration of the alignment characteristic and further ensure the image quality (col. 13, lines 47-51 and col. 15, lines 14-18).

Further, as shown in Figs. 7 and 8, Muramatsu et al. discloses a liquid crystal display device comprising a liquid crystal panel 10, a pad 45 provided between a light guide (below the liquid crystal panel) and a panel guide 100 having a depression 101a

therein for receiving the pad for protecting the liquid crystal display panel from external forces (col. 1, lines 47-51 and col. 2, lines 57-63).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display of Niibori with the teaching of Muramatsu by forming a depression in the panel guide for receiving the pad so as to protect the liquid crystal display panel from slipping in the horizontal direction even though the liquid crystal display panel is large and heavy (col. 6, lines 58-67).

12. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (Fig. 2) in view of Niibori et al. (Niibori, USPN 5,808,707) and Muramatsu et al. (USPN 5,703,665) as applied to claims 12-16 and 18 above and further in view of Kawano et al. (Kawano, USPN 6,195,141 B1).

The LCD of Applicant's Prior Art as modified in view of Niibori and Muramatsu above includes all that is recited in claim 17 except for forming second and third pads on both sides of the printed circuit board.

As shown in Fig. 3, Kawano discloses a LCD device comprising a liquid crystal panel 7 and a printed circuit board 6 which is securely held between a lower cover 14 and an upper cover 17 through buffer members 20. Kawano teaches that the buffer members are made of elastic material to prevent shock impact from damaging the connection between the printed circuit board and the liquid crystal panel, and hence the contents of display can be surely display on the liquid crystal panel (col. 2, lines 19-28; col. 3, lines 41-44).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the LCD device of Applicant's Prior Art with the teaching of Kawano by forming a second silicon pad provided between the main frame and the printed circuit board to maintain a distance between the main frame and the printed circuit board and a third silicon pad provided between the printed circuit board and the bottom case to maintain a distance between the printed circuit board and the bottom case so as to secure the printed circuit board in place and also prevent shock from affecting display quality (col. 2, lines 25-28).

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (571) 272-2293.

Thoi Duong

07/02/2005

DUNG T. NGUYEN
PRIMARY EXAMINER